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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,166

09/15/2006

Duk-Jin Oh

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7030

20583

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10/30/2008

JONES DAY  
222 EAST 41ST ST  
NEW YORK, NY 10017

EXAMINER

ANDERSON, GUY G

ART UNIT

PAPER NUMBER

2883

MAIL DATE

DELIVERY MODE

10/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,166	<b>Applicant(s)</b> OH ET AL.	
	<b>Examiner</b> Guy G. Anderson	<b>Art Unit</b> 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/6/2008</u> .                                                | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1.2 Claim 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL article "New generation of self supporting optical fiber aerial cables by Haag et al., hereinafter Haag.

Regarding claim 1, Haag discloses:

1a) An installation method of an optical fiber composite electric power cable, comprising: installing an electric power cable including a conductor and an air-blown installation tube therein at an installation region; and installing an optical fiber unit into the connected tubes by air pressure. [See Haag for a description of how aerial power lines were supplied with a hollow pipe to allow for the installation of air blown optical fibers in the German power grid system in the 1970 and 1980's, pgs 575-582]

Haag does not specifically disclose:

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1b) connecting tubes of adjacent electric power cables to each other, in an electric power cable connection box.

However, connecting the tubes of adjacent power cables to each other in an electrical power cable junction box would have been obvious to one of ordinary skill in the art at the time of the invention because the cables would not be able transmit power if this step was not performed. Also, one of ordinary skill would realize it would be impossible to install the air blown optical fibers over long distances if the cable assemblies were not connected at each junction.

Regarding claim 2, Haag discloses:

2) The installation method of an optical fiber composite electric power cable according to claim 1, wherein the air-blown installation tube has a spirally wound structure along a length direction of the electric power cable.[page 580]

1.3 Claim 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL article "New generation of self supporting optical fiber aerial cables by Haag et al., hereinafter Haag in view of US-7027697 to Tatarka.

Regarding claim 3, Haag discloses:

3a) A cable structure used for installing an optical fiber composite electric power cable, comprising: a conductor for electric power transmission; an insulator surrounding the conductor; an air-blown installation tube provided out of the insulator. [See Haag for a description of how aerial power lines were supplied with a hollow pipe to allow for the installation of air blown optical fibers in the German power grid system in the 1970 and 1980's, pgs 575-582]

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Haag does not specifically disclose:

3b) a corrosion-protective layer provided to an outermost layer of the cable.

Tatarka discloses a cable having conduits for receiving air blown fibers that can also carry electrical cables and which has an outer jacket to prevent moisture from entering the inner portion of the cable assembly. [Abstract, Fig. 1-2, #132, Col. 5, lines 50-67.]

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the corrosion preventing outer jacket of Tatarka with the cables of Haag in order to protect the aerial cables from moisture intrusion.

Regarding claim 4, Haag discloses:

4) The cable structure according to claim 3, wherein the air-blown installation tube is spirally wound along a length direction of the electric power cable. Page 580]

1.4 Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL article "New generation of self supporting optical fiber aerial cables by Haag et al., hereinafter Haag in view of US-6101304 to Quistorff.

Regarding claims 5-8, Haag does not specifically disclose:

5) The cable structure according to claim 3, further comprising tube protecting bodies contacting with both sides of the air-blown installation tube.

6) The cable structure according to claim 5, wherein the tube protecting bodies are made of material having lower strength than the air-blown installation tube.

7) The cable structure according to claim 6, wherein the tube protecting bodies are made of paper or plastic.

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8) The cable structure according to claim 3, further comprising a wire shield disposed at regular intervals in the same layer as the air-blown installation tube.

However, Quistorff discloses a structure with strength elements displaced alternately with the ABF tubes to protect the ABF tubes from stresses induced in the cable assembly.

[Abstract, Fig.2]

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the structure of Quistorff with the structure of Haag in order to provide protection from stresses induced in the cable assembly. Further, it has been held to be within the skill of an ordinary worker to select a suitable material based on design need.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 1400-2200.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Guy G Anderson/  
Patent Examiner, Art Unit 2883

/Frank G Font/  
Supervisory Patent Examiner, Art Unit 2883

October 21, 2008